

What Is Claimed Is:

Sub A17  
1. A high stability, low emission, fuel  
emulsion composition for an internal combustion engine  
5 comprising

a) 26-50% purified water;

b) 50-74% hydrocarbon petroleum distillate;

said emulsion having an average droplet diameter of  
less than about 10 microns.

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2. The fuel emulsion composition of claim  
1 wherein said emulsion has an average droplet  
diameter of between about 4 microns and about 6  
microns.

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3. The fuel emulsion composition of claim  
1 comprising 30 - 35 % purified water

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4. The fuel emulsion composition of claim  
1 wherein said purified water is purified using  
reverse osmosis, distillation, or ion exchange  
processes.

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5. The fuel emulsion composition of claim  
4 wherein said water is purified using reverse  
osmosis.

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6. The fuel emulsion composition of claim  
1 wherein said hydrocarbon petroleum distillate is  
high paraffinic having a aromatic content of less than  
3%.

35

7. The fuel emulsion composition of claim  
1 wherein said hydrocarbon petroleum distillate is  
diesel fuel.

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Sub A27

8. The fuel emulsion composition of claim  
1 further comprising:

- 5 c) surfactant; A  
d) lubricant; A  
e) corrosion inhibitor;  
f) antifreeze; and  
g) ignition delay modifier.

SubA31  
10 9. The fuel emulsion composition of claim  
8 wherein said surfactant comprises  
alkylphenoethoxylates, alcohol ethoxylates, fatty  
alcohol ethoxylates, alkyl amine ethoxylates or  
mixtures thereof.

15 10. The fuel emulsion composition of claim  
9 wherein said surfactant is comprised of one or more  
of the compositions selected from the group consisting  
of Triton X-102; Tergitol TMN-10; Neodol N1-5; CA-720;  
20 NP-9; and Pluronic 17R-2.

SubA47  
25 11. The fuel emulsion composition of claim  
8 wherein said lubricant comprises one or more C<sub>12</sub> to  
C<sub>22</sub> backbone chains having an adducted acid, wherein  
each said adducted acid is selected, independently  
from the other, from the group consisting of mono-  
phosphoric acid, di-phosphoric acid, tri-phosphoric  
acid, mono-carboxylic acid, di-carboxylic acid and  
tri-carboxylic acid.

30 12. The fuel emulsion composition of claim  
11 wherein said lubricant further comprises an  
alkanolamine neutralizer.

35 13. The fuel emulsion composition of claim

12 wherein said adducted acid is mono- di- or tri-carboxylic acid.

14. The fuel emulsion composition of claim  
5 12 wherein said alkanolamine neutralizer is amino methyl propanol.

15. The fuel emulsion composition of claim  
8 wherein said corrosion inhibitor is an aminoalkanoic  
10 acid.

16. The fuel emulsion composition of claim  
8 wherein said antifreeze is an organic alcohol.

17. The fuel emulsion composition of claim  
16 wherein said antifreeze is methanol.

18. The fuel emulsion composition of claim  
8 wherein said ignition delay modifier comprises one  
20 or more compounds selected from the group consisting of nitrates, nitrites and peroxides.

19. The fuel emulsion composition of claim  
18 wherein said ignition delay modifier comprises  
25 2-ethylhexylnitrate.

20. The fuel emulsion composition of claim  
18 wherein said ignition delay modifier comprises ammonium nitrate.

21. The fuel emulsion composition of claim  
8 comprising 67% by weight diesel fuel, 30% by weight  
purified water, 2% by weight methanol, 0.16% by weight  
X-102; 0.08% by weight N1-5; 0.08% by weight TMN-10,  
35 0.04% Diacid 1550, 0.06% AMP-95, 0.05% Synkad 828, and  
0.37% 2-ethylhexylnitrate.

SubA5

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SubA6